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Vol.11 N°6.

February 1998.

FORMAT

THE HOME OF Z80 COMPUTING



Programming For
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ISSN 0963-8598.

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FORMAT ISSN 0963-8598

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34, Bourton Road, Gloucester, GL4 0LE, England.

Telephone: 01452-412572 Email: Formatpub@aol.com

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NEWS ON 4

PD DISC CATALOGUE

SAM PD have dropped their printed catalogue of PD (and a few non-PD) software and gone back to issuing a catalogue on disc.

The disc contains a short editorial, some reviews of programs available, and some screen shots for you to look at.

The disc is free if you send a stamped addressed envelope (preferably padded) to SAM PC, 18, Mill Lane, Glenburn Road, Skelmersdale, Lancashire, WN8 8RH. Having said the disc is free, I would point out that SAM PD is a non-profit making organization, and Derek Morgan does put a lot of effort into keeping PD software alive on SAM, so I think it would be kind to send him a blank disc to help him keep costs down.

MAC SAM ANYONE?

Readers will be interested to know that there's a version of *SimCoupe* (the SAM emulator we have given details of before) that is now available for Power Macs.

It will not run on older 68K Macs but there are hopes that the author can be persuaded to compile what is known as a 'fat binary' version which will.

If you have Internet access then the MAC version of the SAM emulator, and some others including an emulator for Amstrad's PCWs, can be found at: <http://internetter.com/titan/software/index.html>

RETRO REVIEW

Retro Classix, the magazine aimed at collectors of old computers, led its January 98 issue with a retrospective review of the of the SAM Coupé and its life story.

Retro Classix is available subscription

for £13 for six issues by writing to Graham Howden, 4, Chatterton Avenue, Ermine West, Lincoln, LN1 3TB.

The January issue also featured one of the real grandads of the computer world - the Apple, a look at racing games, as well as other smaller pits and pieces.

SPECTRUM SOFTWARE

These days it is getting very difficult to find Spectrum and other 8 bit software on sale other than at computer shows. But the good news is that some of this software will be on sale again soon - by mail order.

In conjunction with a local software distributor, *FORMAT* will soon be publishing lists for several 8 bit computers (and later maybe some 16 bit machines as well).

The distributor, who once serviced shops from Birminham to Taunton and from Cardiff to Oxford, changed to music and video when the software market began to fade a few years ago. He now has a barn, a garage, two sheds and a 24 foot steel container, all holding hundreds (even thousands) of games for the Spectrum, BBC, C64, C16, Electron, Amstrad, MSX and others. As he is now retiring on health grounds the whole stock has to go and we both thought it was a total waste that it may have ended up in a land-fill site - so the task of listing everything was commenced.

If you want to be put on the mailing list to receive a list as they are compiled, send us an SAE marking the back of the envelope with the name of the computers (max 3) you want software for.

This months credits:-
Simon Goodwin.



A lot has been happening during the last month, but one of the highlights must be the very good write-up on INDUG in the March issue of Computer Shopper. Their 'Club Scene' column, edited by Sandra Beltrão, features INDUG together with a few other clubs that have managed to clock-up in excess of ten years service. This special feature was part of the commemorative 10th Anniversary issue of Computer Shopper which, like our own special 10th Birthday issue last year, devoted lots of space to a trip down memory lane. Even if you don't normally get Computer Shopper this is one issue worth getting because it will help put a lot of today's computer industry into perspective.

We are still looking for someone to sell advertising space in both *FORMAT* and *FORMAT* PC and we really need someone quite urgently. Advertising is necessary to help pay for issues over and above the basic page count of around 20 pages. In recent years advertising has been falling off on the Spectrum and SAM side, but we feel there is a lot of potential for *FORMAT* PC and, as we have always said, we look to the PC mag to help lift some of the burden of overheads that has historically fallen on *FORMAT*. We are hoping that one of you, or someone you know, would be willing to have a go - please!

The April show is getting close now, I look forward to seeing many of you on the 4th in Gloucester. Although I am going to try to get another issue out before the

show I thought it was best to get the show details into this issue - just in case. The way things have been over the last few months I do not want to take the chance that I would be telling you about the show *after* it had happened.

Last month I did ask for feedback on possibly organizing shows for Sunday rather than Saturday - so far not one single letter or phone call. You do read the editorials, *don't* you? If we don't hear from you we will assume everyone wants Saturday shows.

This month, in response to several enquires, I have produced an article on the future of SAM (see page 19). There are some interesting plans afoot, and we would like as many readers as possible to have their say. I think there is still a future for Z80 based machines and the SAM is the only one that is still available to people. However, the Spectrum must not be forgotten, it is still a major force, so I also want Spectrum owners to write telling us what they would like to see developed for their machines.

I feel that this is an important time to look at where the Z80 computers are going. If there is nothing new then the market stagnates and the end will soon be nigh. The future of the Spectrum, the SAM, and anything that develops out of them, is in our hands - if we do not want to be the last generation to delight in programming a Z80 based machine then we have to take stock now.

Until next month.

Bob Brenchley, Editor.

SAM GAMES AVAILABLE FROM REVELATION

SOPHISTRY

One of the **BEST** licenced games on SAM. Originally produced for the Spectrum by CRL, and now brilliantly converted for SAM, Sophistry is a game that is big, perplexing, colourful, frustrating, musical, bouncy, and above all **DIFFERENT** (and it even has the Spectrum version built in so you can take a trip down memory lane).

£9-95 (£8-95 to INDUG members)

TNT

Written by industry mega-star Matt Round - A game packed with humour, colour, sound and **above all ACTION!**

Loosely based on **Bomb Jack** (the game SAM owners have most requested over the years). As well as the normal one player game, **TNT** has gone one better by giving you **TWO** player action - competing against each other, in full glorious technicolour - at the **same** time. It even has a novel feature in a SAM game - a High Score Table, how many others have that?

Avoid the meanies, collect the bonus points. Jump, Hover, Fly - what more do you want???

£9-95 (£8-95 to INDUG members)

ELITE

The legendary game at last available on SAM disc. Using the code of the Spectrum version, long thought the best after the original BBC version, this game is a must for everyone who loves action and adventure. Full manuals, story book and packaging.

£14-95 (£11-95 to INDUG members)

GRUBBING FOR GOLD

GRUBBING FOR GOLD - the most advanced, the most playable, the most enjoyable quiz game since the legendary Quiz Ball. They said it could not be done - they said bringing a TV quiz show to SAM would not work. Well let them eat their hearts out because **YOU GOT IT...**

Hundreds of questions, on a wide variety of subjects at levels to suit most people. It includes a question editor so you can create your own sets of questions. This is the game you can never grow out of.

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More Games Coming Soon

Send SAE for full list of available games.

REVELATION FOR THE VERY BEST IN SERIOUS SOFTWARE

~THE SECRETARY (Version 1.5) - The most advanced and the most widely used word-processor for SAM, powerful, versatile and easy to use. £14.95 (INDUG £12.95)

~COMET Z80 ASSEMBLER - The SAM assembler many professionals use, yet easy enough for the beginner - so why settle for second best? New **LOW Price** £14.95 (INDUG £12.95)

DRIVER

The Graphical User Interface for SAM

DRIVER works with the SAM Mouse (no mouse should be without one) or Keyboard. It provides a full WIMP (Windows, Icons, Menus, Pointers) system that puts you in full control of your SAM. Comes complete with many built-in utilities and ready to run applications. Full manual and a disc-based tutorial. DRIVER gives you the ease of use only found on big office computers before. So easy to use yet so powerful. **Fantastic Value £29.95** (INDUG members £24.95)

Now Includes **FREE Copy Of DRIVER's Extras Disc 1**

DRIVER's Extras Disc still available for existing users at £5.95 (INDUG members £4.95)

SCADs PD Yes, at last, we are pleased to re-release SCADs - the arcade game development system for SAM. Previously sold by Glenco at £24.95 we have now placed the software into the Public Domain so the disc costs you **Only £2.50**. The full manual (over 200 pages) is also available for £12.95 (overseas please add an extra £1 to postage rates below because of weight)

- All prices include UK postage and packing (Europe please add £1, other overseas please add £2).
- Payment by UK cheque (made payable to Revelation Software), PO or cash. Sorry but we can't accept Euro-cheque or Giro.
- Please Quote INDUG membership number clearly on order if claiming discount.

Revelation
Software

• Send orders to:-

Revelation Software, 45, Buddle Lane, Exeter, EX4 1JS.

SHORT SPOT

YOUR HINTS, TIPS AND PROGRAMMING IDEAS

Edited By:- John Wase.

Ooh Tack! It's time already for another **Short Spot**. And I've got a bit of a problem. I knew I had a pile of stuff from Roy Burford, of Norton, Stourbridge, left over from last time. In fact, that was about all I had, and I was very grateful for these snippets. Unfortunately, when I looked at the pile in more detail, I was not sure what had been in **Short Spot** before, and what hadn't. So, ever resourceful, I rang Roy, who sent me a list of what's been published recently, and what hasn't. When I look, I've got loads and loads of stuff still to come. Of course, Roy usually sends me about eight items on a disc, and is prolific, and I often feel that I can't use *all* Roy, and so am scratching away, trying to get some balance, while that's the only stuff I've got. Fine: I've got a little more, now, so I don't feel so bad, but I've still got a lot of Roy's stuff, so you're going to get a long, full-face, whole Montyful of the gen stuff, cos otherwise, it isn't fair on Roy, as he's taken all this trouble!

So let's start with a relatively recent letter, in which Roy mentions that Dean Shepherd's game, 'George' gave him a typing marathon! During his typing, Roy came across the following problems.

(a) He needs confirmation that lines 9180 to 9184 in the listing should be 9080 to 9084.

(b) He also needs the proper message in line 9220.

Finally, once again, we have the problem of capital L (which was sometimes used), and lower case l (which was also used

sometimes instead, and is easily confused with number one). Roy also mentions that he's had to make some adjustments to suit his +128K Spectrum, and some tuning of the code so that it matches the listing. The program seems to run satisfactorily, but without full instructions, it takes time to catch on! Anyone else typed it in, yet, and had similar difficulties?

In **Short Spot**, Volume 10, N°10, p13, Roy omitted to specify the graphics for the 'Depthcharg' program, so here they are...

```
200...<° ,GRAPHON,4,SYMSHIFT2,
      SYMSHIFT3,SYMSHIFT3,GRAPH
      OFF">
400...<° ,GRAPHON,SYMSHIFT3,SY
      MSHIFT3,SYMSHIFT1,GRAPHOFF
      ">
520...<°"GRAPHON,SYMSHIFT1,2,SY
      MSHIFT1,SYMSHIFT4,GRAPHOFF
      ">
620...<°"GRAPHON,3,GRAPHOFF">
630...<°"GRAPHON,SYMSHIFT3,GRAP
      HOFF">
```

Thanks, Roy.

Now; not everyone wants to be a budding mechanical engineer, but a little knowledge is always useful. What's more, you get a double bonus, for the program demonstrates a very handy principle for almost any machine, which is just the job if you're developing a program, and saving several versions. So pay attention!

These were Roy's teaching programs, and were converted initially from one of a number of Microsoft Basic listings. Roy came across them again recently, when

investigating an old file. They were subsequently converted to the TRS-80; a bit of a bind, because everything has to be specified by screen messages, unlike the Spectrum, where you can use a diagram, which saves many words and improves the presentation tremendously. This was then the final conversion. Elementary friction involves dry sliding, so Roy set the coefficient of friction range as you see in the program; users can change this if they want. The program is self-explanatory: here it is!

```

1 REM Origin BCRB2 Computer P
  rogram-Engineering. Frictio
  n. 030780.
2 REM Revised on ZX Spectrum+
  128K by B.C.R.Burford 2206
  97.
3 GOTO 10
4 REM      "....." 8 chars.
5 LET p$="elemfric": LET t$="
  TEMPORARY": LET e$="/P"
6 SAVE d1;t$: VERIFY d1;t$: E
  RASE d1;p$+e$: ERASE d1;p$
  TO ;p$+e$: ERASE d1;t$ TO ;
  p$
7 SAVE d2;t$: VERIFY d2;t$: E
  RASE d2;p$+e$: ERASE d2;p$
  TO ;p$+e$: ERASE d2;t$ TO ;
  p$: STOP
10 POKE 23437,6: POKE 23438,13
   : POKE 23439,205: POKE 2344
   0,68: POKE 23441,14: POKE 2
   3442,201: REM Upward m/c sc
   reen clear. 23438 lines.
60 PRINT AT 0,6;"Elementary Fr
  iction"
70 PLOT 16,92: DRAW 120,0: DRA
  W 0,7: DRAW -120,0: DRAW 0,
  -7
80 PLOT 55,99: DRAW 0,30: DRAW
  50,0: DRAW 0,-30: REM Bloc
  k & base
90 PLOT 30,119: DRAW 40,-20: P
  LOT 66,102: PLOT 67,101: RE
  M u arrow
100 PLOT 80,119: DRAW 0,-20: PL
  OT 82,103: DRAW -4,0: PLOT
  81,102: DRAW -2,0: REM N ar
  row
110 PLOT 104,102: DRAW 0,1: DRA
  W 2,0: DRAW 0,-1: DRAW 15,0

```

```

: PLOT 118,104: DRAW 0,-4:
PLOT 119,103: DRAW 0,-2: RE
M P arrow
120 PRINT AT 6,3;"u"
130 PRINT AT 6,10;"N"
140 PRINT AT 6,15;"F"
150 PRINT AT 6,3;"u"
160 PRINT AT 2,3;"u= coefficient
  t of friction"
170 PRINT AT 4,10;"N= force nor
  mal to"; AT 5,23;"surfaces"
180 PRINT AT 7,17;"F= steady";
  AT 8,18;"sliding force"; AT
  9,18;"parallel to"; AT 10,
  18;"surfaces"
190 PRINT AT 12,0;"Which requir
  ed u, F or N? "; INPUT x$
200 IF x$<>"u" AND x$<>"N" AND
  x$<>"F" THEN GOTO 190
205 PRINT x$
210 IF x$="u" THEN GOSUB 500: G
  OTO 240
220 IF x$="F" THEN GOSUB 700: G
  OTO 240
230 GOSUB 900: REM N
240 PRINT : PRINT "Another one
  Y/N: "
250 LET a$=INKEY$: IF a$="" THE
  N GOTO 250
260 IF a$<>"y" AND a$<>"Y" AND
  a$<>"n" AND a$<>"N" THEN GO
  TO 250
270 IF a$="y" OR a$="Y" THEN LE
  T z=USR 23437: GOTO 190
280 REM
500 REM Calculate u
510 PRINT AT 13,0;"Value of N i
  n Newtons: "; INPUT N
520 IF N<=0 THEN PRINT #0; AT 0
  ,0;"Please give a valid val
  ue": PAUSE 100: GOTO 510
530 PRINT N;"N"
540 PRINT AT 14,0;"F range= ";
  2*N;"N to ";.5*N;"N"
550 PRINT AT 15,0;"Value of F i
  n Newtons: "; INPUT F
560 PRINT AT 15,0;"Value of F i
  n Newtons: "; INPUT F
570 IF F<.2*N OR F>.5*N THEN PR
  INT #0; AT 0,0;"Please give
  valid value": PAUSE 100: G
  OTO 560
580 PRINT F;"N"
590 LET u=F/N
600 PRINT AT 17,0;"Then u=F/N=
  ";INT (u*100+1/2)/100
690 RETURN
700 REM calculate F

```

```

710 PRINT AT 13,0;"Value of N i
  n Newtons: "; INPUT N
720 IF N<=0 THEN PRINT #0; AT 0
  ,0;"Please give a valid val
  ue": PAUSE 100: GOTO 710
730 PRINT N;"N"
740 PRINT AT 14,0;"Value of u(0
  .2 to 0.5): "; INPUT u
750 IF u<.2 OR u>.5 THEN PRINT
  #0; AT 0,0;"Please give a v
  alid value": GOTO 740
760 PRINT u
770 LET F=N*u
780 PRINT AT 16,0;"Then F=N x u
  = ";INT (F*100+1/2)/100;"N"
890 RETURN
900 REM Calculate N
910 PRINT AT 13,0;"Value of F i
  n Newtons: "; INPUT F
920 IF F<=0 THEN PRINT #0; AT 0
  ,0;"Please give a valid val
  ue": GOTO 910
930 PRINT F;"N"
940 PRINT AT 14,0;"Value of u(0
  .2 to 0.5): "; INPUT u
950 IF u<.2 OR u>.5 THEN PRINT
  #0; AT 0,0;"Please give a v
  alid value": GOTO 940
960 PRINT u
970 LET N=F/u
980 PRINT AT 16,0;"Then N= F/u=
  ";INT (N*100+.5)/100;"N"
990 RETURN

```

Fine: You might not want to deal with friction (though it's interesting), particularly if you're a programming wiz, but have a look at the program. You will note that Roy's left in the twin drive SAVE at the head of the program, and that this is somewhat different from the usual Spectrum type. This is intentional. You might well have used the idea, when tying in long programs, or developing new ones, of tagging the end of the file name with a numeral, which is incremented at each save as you progress. Problem is that you end up with a whole disc full of versions leading to the final one. The save in this case just saves the version immediately preceding the current one. The current program is saved and verified as 'temporary'. The

version tagged '/P' is erased. The version last saved as current is renamed with the '/P' tag, and then the 'temporary' version is renamed to the current file name. The current file name can be only 8 characters long. There is a snag, compared with the Commodore 64 from where the idea came. The PLUS D's DOS doesn't like file names which don't exist! One therefore has to put two files on the disc(s) first, (1) using the chosen 8-character filename, and (2) using the chosen 8 character filename plus '/P'. Roy suggests the first 7 lines (8. for a single drive set-up, with STOP at the end of 6), are typed in, and then saved as "elemfric", and "elemfric/P". Then type in some more and merely use GOTO 5, and so on. If you wanted, the idea could be extended to save more previous versions than just one.

Nice one, Roy. Many thanks.

Now stop looking bored, all you SAM owners. It's nice to have a good bunch of Spectrum programs for a change, particularly as we know that they'll all run on the SAM, except for the system variable POKES. Here's another one, for instance, and it can't be too difficult, for Cynthia used to do Tangrams with the 8 9 and 10-year-old children she was teaching. It's ever so easy; just type it in and follow the messages. Don't go too near the edge of the screen, as there is the risk of running off the edge!

```

1 REM D.Lawrence. The Working
  Spectrum. Vol1. Sunshine B
  ooks Ltd. 1982. p81. Tangra
  mm.

```

```

2 REM Revised on ZX Spectrum+
  128K by B.C.R.Burford 0408
  97.

```

```

1000 REM *****
1010 REM Variables
1020 REM *****
1030 DEF FN a()=side*COS (a*PI/4
  )
1040 DEF FN b()=side*SIN (a*PI/4
  )

```

```

1050 LET x=100; LET y=100
1060 INPUT "Clear Screen? (Y/N)";q$: PAPER 6: INK 1: IF q$="Y" OR q$="y" THEN CLS
1070 LET i$="Move with cursor arrows or '9'"
1080 LET k$="0" to abandon shape
1090 LET j$="1" to record screen or quit.
1100 DIM o$(32)
1110 REM *****
1120 REM Select shape
1130 REM *****
1140 GOSUB 1650: PRINT AT 20,0; o$;k$: LET supp=3
1150 INPUT "1:T 2:P 3:S 4:C ";shape: IF shape=0 THEN GOTO 1110
1160 IF shape=4 THEN GOSUB 1410: GOTO 1110
1170 IF shape=2 THEN INPUT "Type 1 or 2 ";supp: IF supp=0 THEN GOTO 1110
1180 IF shape=1 THEN INPUT "Size (1,2,3) ";size: IF size=0 THEN GOTO 1110
1190 INPUT "Orientation ";o: LET o=3-o: LET a=o: IF o=3 THEN GOTO 1110
1200 INPUT "Corner? ";c1: IF c1=0 THEN GOTO 1110
1210 LET long=36: IF shape=1 THEN LET long=36*((SQR 2)^size)-.5
1220 LET short=long/SQR 2
1230 INPUT "Draw:1 Erase:2 ";rawd: OVER 1
1240 IF shape=1 THEN GOSUB 1470
1250 IF shape=2 THEN GOSUB 1520
1260 IF shape=3 THEN GOSUB 1570
1270 IF rawd=1 THEN INPUT "Confirm shape? (Y/N)";q$: LET a=o: OVER (q$="N" OR q$="n"); PLOT INVERSE 1; OVER 1;x,y
1280 IF rawd<>1 THEN OVER 0: GOTO 1110
1290 IF shape=1 THEN GOSUB 1470
1300 IF shape=2 THEN GOSUB 1520
1310 IF shape=3 THEN GOSUB 1570
1320 OVER 0: GOTO 1110
1330 REM *****
1340 REM Save pattern
1350 REM *****
1360 INPUT "Do you want to quit? (Y/N) ";q$: IF q$="Y" OR q$="y" THEN OVER 0: BRIGHT 0: BORDER 7: PAPER 7: INK 0: STOP

```

```

1370 INPUT "File name/Drive? ";n$; " ";d$
1380 PRINT AT 20,0;"Restart program with GOTO1"
1390 SAVE "m";d;n$ SCREEN$
1400 OVER 0: BRIGHT 0: BORDER 7: PAPER 7: INK 0: STOP
1410 REM *****
1420 REM Circle
1430 REM *****
1440 INPUT "Radius? ";r: IF r=0 THEN RETURN
1450 CIRCLE OVER 1;x,y,r
1460 INPUT "Confirm circle? (Y/N) ";q$: CIRCLE OVER (q$="N" OR q$="n");x,y,r: RETURN
1470 REM *****
1480 REM Triangles
1490 REM *****
1500 LET a$="036": FOR i=0 TO 2: LET il=c1+i-3*((i+c1)>3): LET side=short: IF il=2 THEN LET side=long
1510 LET a=o-VAL a$(il): GOSUB 1610: NEXT i: RETURN
1520 REM *****
1530 REM Parallelogram
1540 REM *****
1550 LET a$="0145": FOR i=0 TO 3: LET il=c1+i-4*((i+c1)>4): LET side=long: IF il=2 OR il=4 THEN LET side=short
1560 LET a=o-VAL a$(il)+2*VAL a$(il)*(supp=2): GOSUB 1610: NEXT i: RETURN
1570 REM *****
1580 REM Square
1590 REM *****
1600 LET side=long: FOR i=0 TO 3: LET a=o-2*i: GOSUB 1610: NEXT i: RETURN
1610 REM *****
1620 REM Draw shape
1630 REM *****
1640 DRAW FN a(),FN b(): RETURN
1650 REM *****
1660 REM Moving pixel
1670 REM *****
1680 PRINT AT 20,0;I$,j$
1690 OVER 1: FOR i=1 TO 2: PLOT BRIGHT 1 AND i=1;x,y: PLOT x,y+1: PLOT x,y+2: PAUSE 1+2*(i=1): NEXT i: OVER 0: PL

```

```

1700 LET t$=INKEY$: IF t$="" THEN GOTO 1690
1710 IF t$="9" THEN RETURN
1720 IF t$="1" THEN GOTO 1330
1730 IF t$>"9" OR t$<CHR$ 8 THEN GOTO 1690
1740 LET x=x+(t$=CHR$ 9)-(t$=CHR$ 8): LET x=x-(x>245)+(x<5)
1750 LET y=y+(t$=CHR$ 11)-(t$=CHR$ 10): LET y=y+(y<20)-(y>170)
1760 GOTO 1690

```

There - that's wonderful, isn't it!

Well, Roy, without you, it would look a lot thinner this month! Our grateful thanks!

Now over to Simon Turk of Tunbridge Wells, who sent me some kind words of consolation, together with a program for SAM, following December's appeal for programs that printed in a fancy way. The variables all have names which suggest their uses, so understanding what's going on shouldn't be too difficult. Basically, it uses Boolean logic (BAND command) to print only specific bits of a byte onto the screen. The program includes three effects: Forwards, Backwards and Magic (Simon's favourite). If you felt like adding more similar effects, it would be pretty easy to alter the data statements.

The only problem with this program is that it is abominably slow. For one reason, it's all in Basic. Simon suggests it could be speeded up by writing the small sections that were the speed-critical pinch-points in machine code, but I am not sure if that is the only solution. Anyone out there suggest other good ideas on speeding this up?

Here it is: type it in, and let us know what you think!

```

10 REM Text Style
20 INPUT "Enter B for backwards F for forwards or M to appear by magic";q$
30 IF q$="f" OR q$="F" THEN L

```

```

ET choice=250
40 IF q$="b" OR q$="B" THEN L
ET choice=260
45 IF q$="m" OR q$="M" THEN L
ET choice=270
50 INPUT "Please enter a message to print on screen (maximum 255 letters) ";a$
60 RESTORE choice
70 LET letter=1
80 MODE 1
90 LET x=IN 252 BAND 31: LET screenadd=(x+1)*16384
100 FOR lz=1 TO LEN a$
110 LET ascii=CODE a$(lz)
120 FOR l=1 TO 8
130 LET char=PEEK SVAR 566+(PEEK SVAR 567)*256
140 READ sim
150 FOR lo=0 TO 7
160 LET byte=char+(ascii*8)+lo
170 LET peekbyte=PEEK byte
180 LET mask=peekbyte BAND sim
190 POKE screenadd+(lo*256),mask
200 NEXT lo
210 NEXT l
220 LET screenadd=screenadd+1
230 RESTORE choice
240 NEXT lz
250 DATA 128,192,224,240,248,252,254,255
260 DATA 1,3,7,15,31,63,127,255
270 DATA 165,89,163,208,67,83,247,255

```

Many thanks, Simon.

And that's really it, folks. Next month, I hope to feature some more of Roy's contributions, together with some gen by Miles Kinloch, both on the Spectrum, and I'm just hoping someone might send in something more on SAM. Until then, au revoir; please keep all your snippets coming to me; without them I can't put a column together. Please send them to:-

John Wase,
Green Lays Cottage,
Bishampton,
Pershore,
Worce,
WR10 2LX.

See you next month.

IT'S SHOWTIME

Spring is here, it must be, because it is time for the *Gloucester Spring Show*. That's right, Saturday the 4th April 1998 will see our 10th Gloucester Spectrum & Sam Show at the usual venue at Quedgeley Village Hall, Bristol Road (B4008) Gloucester - close to Junction 12 on the M5.

The show opens to the public at 10:30am as usual, and runs until 4:30pm. Entry is just £2 per person, with up to two under 14s free if accompanied by an adult - we like to look on this as being a family show so we do what we can to encourage the younger visitors.

Make sure you bring lots of money with you or at least your cheque book (we can always provide the pen).

BRING AND BUY

The Bring and Buy stand is famous with Gloucester Show regulars. It is usually one of the most crowded stands during the day, giving you the opportunity both to rid yourself of those surplus items you have gathered over the years and of course to find that one item you have always been looking for.

If you are selling items then please remember to make sure everything is fully working, complete, and has its instructions or manual. If possible put a small label on each item giving your name and the price you are asking.

The Bring and Buy table is not constantly manned, although when possible we do try to keep an eye on things. However, we leave it up to buyer and seller to get together and do the

business. Each show sees many hundreds of items change hands and I'm sure there will be even more this time, but you will understand that we, as organizers, cannot be responsible for items left for sale, nor can we be responsible for items you purchase.

Our recommendation to buyers is to make sure you get the seller's address, just in case.

STAND BOOKINGS

If anyone wants a stand at this show (or for a future show), and has not already had a booking form from us, then ring Jenny on 01452-412572 right away.

HOTELS

If you want to make a weekend of your visit to Gloucester then ring the Tourist Information Centre on 01452 421188 or write to them at St. Michael's Tower, The Cross, Gloucester, GL1 1PD. They will send you a list of local hotels in your price range.

FOOD & DRINK

The most important service at any show. There will be plenty of refreshments and snacks available inside the show, at very cheap prices I will add - not the rip-off prices you find at many shows.

There is also a good pub right next door that sells midday meals and there are plenty of other pubs in the area. Gloucester's main Tesco is also just over the road.

See You At The Show

GETTING THERE

Gloucester is very easy to reach from most parts of the country either by road, rail or coach.

By Car: If you are travelling north on the M5 then come off at junction 12 and follow signs for Gloucester. A few hundred yards from the motorway slip-road you will come to a roundabout with a service station on your left, take the second exit and follow the A38 towards Gloucester for a short distance. Now take the turning on the left, marked B4008 with signs for Quedgeley and the Severn Vale Shopping Centre. Go straight over at the first roundabout and then just before the next roundabout the hall is on the left, set back a bit from the road and often slightly hidden by the mobile fruit & veg stall that uses the forecourt.

For those coming south there are two choices. Junction 12 is not available southbound, so it is easier to continue to exit 13 and then turn north onto the A38 - this only adds about 5 miles to the journey and avoids the traffic around Gloucester. The alternative is to exit at junction 11 (the A40/Cheltenham exit) and follow signs for Gloucester, follow the ring-road around - you eventually get signs for M5 South - until you reach a large traffic light controlled junction (used to be the roundabout if you've been before). This has the local BT offices on the left, go straight across, following signs for Severn Vale Shopping Centre (see above for more details).

Anyone not using the motorway should be able to work things out from their own

road atlas, Quedgeley is to the south of the city.

Warning, anyone with new maps may be tempted to use junction 11a, don't, it is a nightmare and even locals don't know where it goes to.

Parking: Please use the free parking provided, just round the corner, in front of the Tesco Super-store. Remember to lock any valuables safely away out of sight - being a busy car-park your car should be quite safe, but it is better not to take chances by putting temptation in front of thieves.

By Rail or Coach: Gloucester is well served by Rail and Coach services. Buses to Quedgeley run about every 15 minutes from the Bus/Coach station (which is almost opposite the entrance to the Train station) ask at the travel office. On the bus ask the driver for Tesco Superstore - he will know where you need to get off, the journey takes around 12 minutes.

Other Attractions: There are plenty of shops in the city centre. There is also the National Waterways Museum at Gloucester Docks, our famous Cathedral and lots of other historic and interesting places to visit.

Cheltenham, with all its fine Georgian buildings is only a few miles away. There are many picturesque Cotswold villages and beautiful scenery within just a few miles of the hall. Just down the A38 there is the Slimbridge Wild Fowl Sanctuary, a place everyone should visit, so why not bring the whole family.

SAM elite 512

FEATURES INCLUDE

- 512K RAM
- 32K ROM
- 800K Floppy Disc Drive
- 6 Channel Stereo Sound (mono through TV)
- Z80B 6MHz Processor
- Centronics Printer Port
- Joystick Port
- MIDI & Networking
- 128 Colours
- 4 Screen Modes
- SCART Output (for Monitor or TV)
- Plus LOTS More....

ONLY £199⁹⁵

Includes 1 year return to base warranty on full computer PLUS extended 2nd year warranty on main board.

The advanced computer that retains a user friendly appeal which makes even the beginner feel right at home. An easy to learn Basic and disc operating system (no messing with slow tapes here) will allow you to do things you never thought possible before. Your SAM comes with a very easy to read manual and everything you need to get started - It even has some pretty impressive demo software for you to run, just to give you a few ideas for starters.

If you already own a Spectrum then this is the machine for you because you don't have to throw away all you have learnt so far - just be prepared to be amazed at the extra power and features.

POWER AT A PRICE YOU CAN AFFORD...

Reconditioned SAM Coupé

We are able to supply a small number of professionally reconditioned SAM Coupé computers. These have been fitted with a modern style disc drive, a version 3 ROM, new keyboard unit, and are supplied with new manuals and DOS system disc. They carry a full 90 day full return to base warranty. Because these are reconditioned machines there may be slight blemishes to case or base.

Has All The Features Of The SAM Elite, Except That There Is No Built-in Printer Port On The Coupé (see the SPI, under interfaces below)

ONLY £149⁹⁵

SAM Coupé Replacement Disc Drives

The original slot-in slim-line drives produced for the SAM Coupé are no longer made. If your existing drive is now showing signs of terminal decline perhaps it is time you gave your SAM a new lease of life by fitting a modern style IPC type floppy drive.

In most cases we find the faults with old drives are mechanical (due to worn heads, stepper motor failure, etc.) in these cases you need an Internal Interface Type 1 to which you transfer the 1772 disc controller chip from your old drive - thus making the upgrade as cheap as possible.

If you want to fit a second drive (or first drive, if you don't have one or the 1772 on your old drive is faulty) then order a Type 2.

Both types are available in either kit form or ready assembled. For the kit you will need screwdriver, soldering iron, solder and a reasonable level of soldering skills. All you need for the assembled version is a screwdriver. Full fitting instructions are given and the only other thing you need is a standard PC type disc drive from your local supplier (cost about £20 to £25).

If you have any doubts about which type of interface you need, or any questions about the drive fitting in general, then please give the FORMAT hotline a ring on 01452-412572 and they will be pleased to help you.

Kit Form | Assembled

Internal Disc Interface Type 1 (without 1772)	£19.95	£29.95
Internal Disc Interface Type 2 (including 1772)	£34.95	£44.95

Ordering: Write your order clearly, state your name, full address and phone number, and if possible please quote your INDUG number as this will help to speed orders. Payment: Cheques and UK Postal Orders should be made payable to FORMAT PUBLICATIONS. Overseas customers may also pay using FORMAT's foreign exchange scheme. Postage & Packing: Prices include UK p.p.p. Overseas customers please write for a quote. Prices valid for 90 days from date of publication. E.&O.E.

Send Your Orders To:

West Coast Mail Order,
c/o Format Publications,
34, Bourton Road,
Gloucester,
GL4 0LE.

West Coast Computers

INTERFACES

These interfaces work with both the SAM elite and the SAM Coupé unless otherwise stated.

SAM MOUSE SYSTEM Interface, High Quality Mouse and the Software to drive it. The interface plugs into the mouse port on the back of SAM so you don't need a spare expansion socket. More and more software now works better if you use a mouse. **Only £39.95**

SAM PRINTER INTERFACE The SPI (Coupé only) allows connection to any standard parallel printer. Allows standard LPRINT, LLIST & DUMP commands to work on compatible printers. Plugs straight into the expansion port. Requires BBC type 26 way ribbon printer cable (see below). **Only £24.95**

TWOCLIP Allows two interfaces to be connected to SAM's expansion port at same time. **Only £19.95**

XDI The External Disc Interface. Allows external 3 1/2" or 5 1/4" drive to be connected to SAM Coupé. Also includes Parallel Printer Interface. **Only £44.95**

ALSO AVAILABLE: Printer Cable - £7.95, SCART Cable - £7.95, Replacement Keyboard £14.95, Replacement Power Supply - please ring. Plus spare parts service - tell us what you want and we will give you a price.

A BINDING IDEA

By- George B. Munro.

What a sorry day it had turned out to be. No more binders for my copies of *FORMAT*. To say the very least it was a disasterstroke. Never mind.. there had to be a stationers in London who would be able to supply me with them. What was it the man said, "And the band played believe it if you like".

In fact I eventually found something like it, but it was 6cm broader and 7cm taller. In addition it had 14 rods instead of 12 and the rod holder would have to be removed and repositioned as well as the binder cut down to the size of the existing binders. Yes.. I did it, but it looked incongruous alongside my existing binders and took up considerably more room in one book shelf.

About eleven months later when another new volume of *FORMAT* was due to start, the thought came to me, "Why not bind them like a well bound book?" So, it was off to the local library to find a book on *Bookbinding* (for the amateur) and indeed there was just such a book - *Bookbinding, A Beginners Manual* by John Ashman. Publisher A & C Black 1981.

Having read it from cover to cover, this appeared to me to be something which even 'dopey I' could do. Apparently I was going to need strong binding thread, back binding tape, PVA solution and some large needles all of which could be supplied by: J.Hewitt & Sons Ltd., Unit 28, Park Royal Metro Centre, Britannia Way, off Coronation Rd. London, NW10

7PR. Tel: 0181 965 5377.

For the outside covers, some stiff card was needed, for which I used some left over 'divider' pages from a 'Twinlock' filing system which had long since become surplus to requirements. The titling would be easy, for the covers a photocopy of *'FORMAT, The Home of Z80 Computing'* and a spine title made using the program 'Superprint 2'.

Having never done anything like this before, it was going to be strictly by the book... but it worked. So away with my old binders, I now have ten volumes of *FORMAT*, (taking up very much less space on my book shelves) neatly bound in dark green covers, and very pleasant reading they make too.

I spoke to Bob, and he agreed with me, that it would be worth while for me to try and detail just how it was done in an issue of *FORMAT*, and here it is....

Firstly, may I make two things perfectly clear... this is not intended to be (nor by any stretch of imagination could it ever be thought to be) a definitive work on bookbinding, and secondly, I am not and never have been a professional bookbinder as will become abundantly plain as this article progresses. (A binder I may be, but a bookbinder only as a beginner.)

So you may ask, if the last paragraph is true, why do I have the effrontery to write this screed.. that is simple to answer.. it is to try and save your

FORMATS from spreading all around the house, and to draw to your attention the alternative to the, now no longer available, **FORMAT** binders.

So if you did manage to get hold of the book I recommended earlier, lets get down to work. The relevant chapter is N^o7 - Multi-Section Books, and the procedure we will adopt is in four parts...

1. Removal of staples from **FORMATs** and piercing of stitch holes using the template as shown on diagram 2.
2. Stitching **FORMATs** together incorporating the binding tape as per diagrams 1 and 3, and including end reinforcements for **FORMATs** No. 1 and 12 of each volume.
3. Applying PVA over the stitching and tapes to bind them together (PVA is Poly Vinyl Acetate or as it is commonly known in the carpentry trade, 'white cement').
4. Attaching outside and inside cover to lock pages and tapes in position.

Stage 1

Naturally, before starting you will have provided yourself with:-

- a). Strong white thread for stitching (the recommended would be a 16/4).
- b). About 36cm (15") of cotton or linen tape 15mm (3/4") broad.
- c). A strong needle about 7 or 8 cm in length (2 3/4 to 3").
- d). A pot, or tube, or tub of PVA adhesive.

You will then need to make three templates as per diagram 2.

One of these will be used as a guide to make the stitch holes in the **FORMATs** for the binding thread, and the other two (folded in half length-wise) to form the end strengthener for the first and last copies of **FORMAT** in the volume.

As a matter of policy it is recommended that you read this article completely before 'having a go'.

Since the three templates are meant to perform different functions, it might be

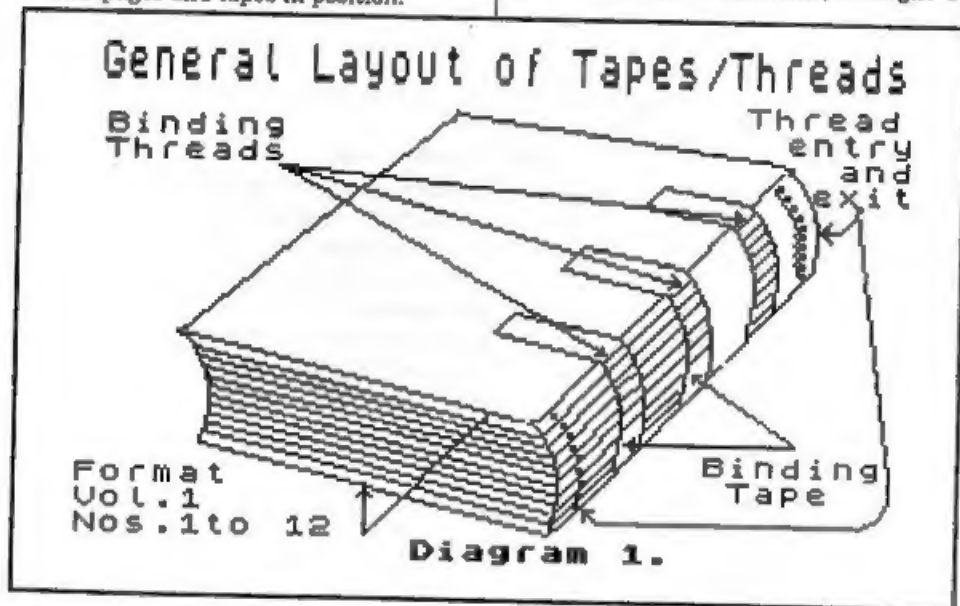


Diagram 1.

Diagram of Thread hole template and End reinforcements for first and last **FORMATs** in Volume

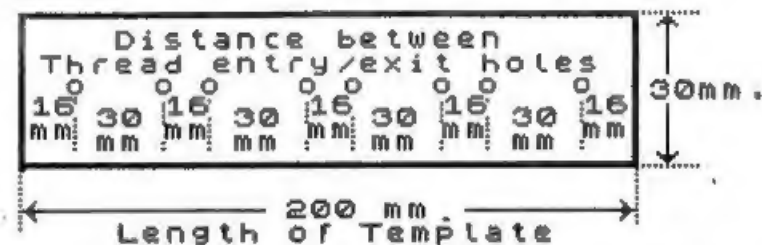


Diagram 2.

as well if they were made of slightly different materials e.g. the two that are intended as reinforcers for the first and last **FORMATs** in the volume, should be made of a firm card, but also one which will stand up to a degree of flexing, since they are to some degree, the 'hinges' on which the volume opens and shuts.

A third template should be made of a much more rigid card, because you will be using it as a guide, to punch the thread holes in all **FORMATs** in the volume, prior to stitching them together.

Having removed the staples from the **FORMAT**, open it out flat ensuring that the pages are all squared up. The more accurately the holes are punched for the thread holes, the neater will be the final result.

In order to ensure that the holes are punched absolutely down the centre of the page, it might be as well to draw a pencil line down the central crease, this can then be used as a guide to line up beneath the template. To further secure accuracy I used two spring action letter clips to clamp the template to the **FORMAT** pages whilst punching the

holes.

The holes are punched using an 'awl' or something similar (an awl is a tool usually used by a leather worker and consists of a sharp pointed rod mounted in a wooden handle). A reasonable substitute can be made from a small screwdriver, ground or filed to a point. An awl can of course be obtained from J.Hewitt and sons.

Before stitching, cut 3 lengths of the 15mm broad tape approximately 10 cm (4") long, and thread the needle with a 250 cm length of thread [*that is just over 8 feet to those like me who understand real measurements. Ed.*] which should be enough to stitch all twelve **FORMATs** together. If you find that this length of thread is more than you can comfortably handle, then it may be necessary to join up shorter lengths during the stitching.

Having first folded one of the reinforcing templates down its length so that a **FORMAT** will sit comfortably in it, then marry it up with the first **FORMAT** in the volume. With the rear edge facing you and the title page face down, starting on the right, as per

diagram 3, take the needle with thread, in at the extreme right hand hole and back out through the second hole. Go back in again through the third hole and at the same time lock in the tape in the loop which you have just formed.

Carry on in this manner all the way down the length of the *FORMAT* until you have incorporated all three lengths of tape. Finally, pull the thread tight down its length so that the thread locks the tapes in on the *FORMAT*.

The tape will eventually lie one third of its length back and front and one third across the spine, see diagram 1.

Having stitched all twelve *FORMATs* together and ensured that the stitching is tight, the next job is to liberally spread the PVA over their folded ends so that they, plus stitching, plus tape will all be thoroughly glued together. Make sure before you carry out this procedure, that the *FORMATs* have been well pressed down on one another so that the PVA does not run down between the pages.

Once the PVA has dried (usually overnight) I found it to be a good idea to repeat the gluing process another couple

of times so as to build up a good backing to the book, before moving on to the final stage of applying its cover.

Since not all the volumes will finish up as being of the same thickness, it will perhaps be better to delay cutting the cover to size until such time as the gluing process is finished and is completely dry.

Naturally the cover will need to be sufficiently large to go over both back and front as well as across the back. It is not stuck to the spine of the book, but is stuck to the reinforcing strips on the first and last *FORMATs*, as well as to the protruding tapes. Once this has been done, and it is more or less dry, a half sheet of white A4 paper can be stuck on the inside of the cover over the tapes and over the inside edge of the reinforcing strip.

Titles for the front cover, and the book end were made using the Spectrum program 'Powerprint' and once all is complete, if you can find yourself a friendly bookbinder or stationer with a power guillotine, the whole lot can be neatly trimmed off to give a very professional finish.

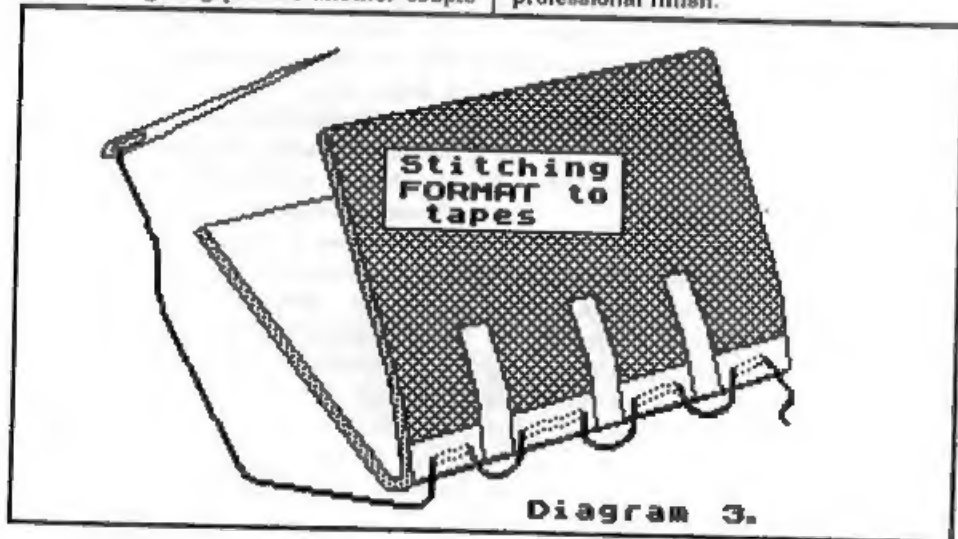


Diagram 3.

SAM

The Future...

By:- Bob Branchley.

Some of you may have heard rumours about the possibility of a new version of SAM, so we thought it was time to set the record straight.

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Sounds a lot doesn't it, but what it means is that this is we want discussions on the subject to take place through the pages of *FORMAT*.

Right, down to business. Although the rights to SAM are still technically in the hands of West Coast Computers, most of you know that we at Format Publications have handled most of the things related to SAM since Blue Alpha folded a couple of years ago. In that time we have been able to keep production going, albeit on a small scale. But we want to have a future for SAM and we think that for it to have a future, it must grow.

So, statement #1. There will be a new SAM - one day.

But to get there we want to do it by expanding the existing SAM one step at a time - that way, *NONE* of the existing owners will feel left out and there will be no reason for people to delay buying an

existing SAM just because there may be something round the corner. In truth a new SAM, if it happens, may be at least two years away from production, so for now we can forget it.

Statement #2. No SAM user should feel that their machine is going to be out of date. This is, to my mind, the most important part of the project.

The idea is two-fold, to enhance SAM for its current users and to provide an experimental platform which one day, if the backers can be found, will lead to a new British computer with much of the nicer features of today's SAM, plus a lot more.

If anyone is interested in helping with aspects of the project then please contact me and we can talk in more detail.

THE PLAN

The plan divides into sections, each with several parts. Although some work can be done on later sections most of what is listed below is in the order that work needs to be done. In the first instance our main need is for people with Z80 machine code knowledge for stage 1.

Here is the list:-

Stage 1. To provide on SAM a stable development platform for software required both for the existing SAM and for anything that is to follow.

- a) Produce definitive list of bugs in both ROM and MasterDOS+MasterBasic.
- b) Look at existing Basic/DOS and define areas where closer specification of syntax

will reduce the amount of coding (more space is needed) and/or increase the speed of interpreting (always handy).

c) Produce some form of SRAM card (even if it is only the same as that designed by Bruce Gordon). This is to allow people to load and run new ROM versions without the need to distribute EPROMs or the like.

d) Using information from (a) and (b) above, and distributing the source code in Comet form, start to re-work the ROM/DOS into its new form (this may well be an open-ended project).

e) Extend and integrate SD Software's HDOS hard disc operating system into new ROM/DOS.

f) As platform becomes more stable develop more extensive form of C with possibly both Z80 and Z380 object versions.

Stage 2. To extend the hardware abilities of the existing SAM.

a) Define new 'extended' bus for SAM, taking into account the possibility of 2nd processor (Z380 or something else yet to be looked at (Z380 looks best at the moment, but who can tell six months from now)). We know we will need at least a 16bit data-bus and a much wider address-bus.

b) Work on new memory expansion (1 to 16Mb ??).

c) Look at a new graphics card.

d) Decide on new floppy disc interface standard.

e) Produce interface for PC type keyboard and mouse.

Items b,c,d & e will take place in parallel.

f) Select first of the 2nd processors to implement.

Readers will note that no project is planned at the moment for sound improvement. We feel that excellent work in this field has already been done by Quazar with their Surround Sound system so there is little point at this stage in duplicating their efforts.

Stage 3. Some time from now, if the money can be found, we would look at bringing together all developments into a new single board machine possibly to be called Samson.

Now I know that a lot of this will have gone over the top of a lot of heads - it even makes my brain hurt at times. But what I wanted to do was explain to *FORMAT* readers what is going on so that nobody will panic and abandon their SAMs (or their Spectrums for that matter).

The project is diverse, and I hope that a lot of you will feel that you can help in some way. And even if you are a Spectrum owner there is still room for you to help because it is in your interests as well to keep at least one Z80 based computer running well into the 21st century. We do, by the way, have plans to include a Spectrum ROM option on the SRAM system and possibly a way of connecting more items of Spectrum hardware.

Right, it is over to you lot now. Please help in any way you can, even if it is only by writing in with suggestions of what new things you would like to see produced.

With all the talented people in INDUG I'm sure that things will go very well and that we will soon have something to show for our efforts. SAM's future is what we make it.

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Released 02/03/1998.



YOUR LETTERS

Dear Editor,

Enclosed are my subscription renewal for the next years *FORMAT* and *FORMAT PC*.

I have been a subscriber from the launch of *SAM Coupé* and can honestly say I have enjoyed every single issue and found something of interest in each one.

This is the first time I have written to you but felt I had to say thank you to you and all at *FORMAT* for the pleasure I get from your mag.

Also please find enclosed some 'Millennium' bits for Jenny, hope they are of some use to you Jenny.

As I mentioned on the phone to you I have some old *Your Sinclair* and *Sinclair User* mags and will try and sort out some programs for *FORMAT* to use.

All articles are enjoyable, something to learn from each one.

Yours sincerely, Edward Armson.

Thank you very much Edward. Jenny pounced on the Year 2000 material (you should see the files she's building from material readers send in - they are taking over her office).

And I would be happy to see anything you produce for *FORMAT*, any contributions from readers are always well received. *Ed.*

Dear Editor,

In connection with Ken Murray-Taylor's letter, *FORMAT* Vol.11 N°3 page 21, I suggest that the discs which he cannot re-format should first be demagnetised to remove the data which you suggest may be causing the trouble. Are the discs the correct density is

another question.

I was interested in Ben Curran's item page 28 as I had the identical problem when I purchased twin drives which were supplied by Datel and used two PSUs each connected to the drive via a lead with a 3mm Jack plug. One of the drives ground to a halt when doing format D1 to D2 which takes about 15 minutes. The drives PSU did not have a heat sink and I assumed the other identical PSU was the same. I checked the PSU voltage under load and it dropped from an a.c. 4.95v to 3v! Evidently, neither PSU could supply its rated 5v 500ma! Though I provided Datel with this information I had to send the drive back to them three times before they eventually twigged it could be the PSU. They provided me with a replacement which cured the problem. I opened up the replacement PSU, it had a heat sink. On opening the PSU I assumed was identical to the problem one I found this had a heat sink! In use the PSUs get rather hot so I soon removed the covers and drilled judiciously located holes to ventilate the unit. I also treated the Spectrum PSU similarly. Like Ben Curran I advise utmost caution in modifying electrical/electronic equipment without background knowledge.

Yours sincerely, Roy Burford.

Once, many moons ago, I had a really useful hand-held eraser - you held it close over a cassette tape or reel of tape, pressed the button on the front, then swirling it around over the tape you gradually raised it away. The gradually

diminishing magnetic field left the tape in excellent condition to be re-recorded.

However, I made the mistake of lending it out, and although I know who had it they have denied to this day that they still have it. And can I find another? No I can't. Maplin, Farnell, RS, Tandy and lots of other retailers have all looked at me as if I were mad (no comments please) whenever I've asked.

But I agree, if you can do it a demagnetisation of a disc will often rejuvenate it no end. Thanks for the letter Roy. Ed.

Dear Editor,

I bought a SAM Elite last year and enjoy programming it as well as playing games. My reason for buying a SAM was that my Spectrum 128K with PLUS D had developed a number of faults and I thought the SAM would be the logical step forward as it had better Basic and boasted Spectrum compatibility with a Spectrum emulator. I thought I wouldn't be using the Spectrum again so I didn't get the faults fixed. However, when I first received my SAM I was disappointed that I could not load Spectrum games from tape into the machine and so found myself going back to my Spectrum and PLUS D to make snapshots of games on to disc which then could be loaded from disc into the SAM running an emulator. However, converting the games to disc is proving to be a nightmare as my PLUS D interface does not fit snug on the edge connector but instead wobbles with the slightest movement on the computer, thus causing the machine to reset. In other words after waiting for ages for the game to load, pressing the snapshot button would nine times out of ten constitute a wobble thus crashing the machine, the game still not saved to disc. Back to square one!! Therefore I am appealing to your readers for suggestions on how to remedy this situation. Also my Spectrum has developed a picture fault

which causes banding and jumping of the screen sporadically. Again I would appreciate suggestions.

Before I close, just one more request. I recently came across a series of articles in past *FORMATS* detailing how to convert multi-load games for the Spectrum so that the levels load from disc and not tape. It was very interesting and I would like to try out the techniques detailed on my multi-loaders. However, this would require using a snapshot hacker program which, you've guessed it, I do not own. So do you or your readers have a copy I could buy from them. I would pay generously. Thanks for your time and keep up the good work.

PS. How do you create a mode 1 (Spectrum) screen on SAMpaint. The reason I would like to do this is because I no longer own a Kempston mouse interface and mouse to use on OCP 128K artist but I own a SAM mouse for SAMpaint and so instead of trying to track down a Spectrum mouse I could port my screens over.

Yours sincerely, Simon Turk.

Loading Spectrum games into SAM via the tape socket require much more fiddling with the volume levels than the Spectrum does - but with perseverance you should be able to do it. However, you are right to say that snapshotting the game on the Spectrum and then using the disc is by far the easier way.

Cleaning the Spectrum's edge connector should relieve the 'wobble' problem. Also try using the Spectrum and PLUS D on a small sheet of glass (for years I used my ZX81 on an old mirror) and maybe even using a large wedge of blue-tak to hold both the Spectrum and the PLUS D a little more ridged.

Other than that, I will open the floor to other readers who, I've no doubt, will come up with a few more ideas - both on the wobble and on your other problems. Ed.

Dear Editor,

When I renewed my membership I had intended to write at the same time but I somehow did not find the time.

I have noticed of late that *FORMAT* is not as bulky as it used to be, there seems to be less pages per month in the last five or six issues. Is this because you spend more time on *FORMAT* PC or is it due to a shortage of articles?

I found Jenny's article about the Millennium Files very interesting and I wondered if there is any way of telling if a video recorder will be affected. We bought a Panasonic video recorder 18 months to two years ago and it can be set manually or by using Video Plus. It has a clock that can be set automatically but the year only has two digits. I seem to remember that it was mentioned that someone was working on a program for *The Secretary* in relation to the millennium problem. Is there any news of this yet?

I'm sure every reader was devastated by the sad news of John Wase's loss and it's good to see him back so soon.

I have been looking through the last twelve months issues to see if I could list my favourite articles and I am sorry to say that I think that the standard has dropped since Volume 11 started. The exceptions are the regulars, Short Spot, Help Page and Minefield.

I hope this is just a 'bad patch' and that soon the magazine will soon be back to its usual standard.

Yours sincerely, Colin Rout.

The main reason for the slightly smaller issues is the drop in advertising. While we kept things going for some time, it is necessary over the longer run to live within our means. Currently we are urgently looking for someone to sell advertising space for both magazines so hopefully we can expand the issue size again later in the year.

Having said that, it is true that we could always do with more articles, the

stock-pile is looking smaller than it has ever done in the past.

I'd like to think that we have managed to keep the standards as high as ever, we are of course missing the input of Carol Brooksbank these days and she was always a firm favourite with readers. The most common complaint we receive is that there is never enough type-in programs, something which most readers seem to enjoy. So come on readers, dig deep, we need more articles - especially programs, I'm sure you can all come up with something if you put your minds to it. Ed.

Dear Editor,

Reading the letter of Mr Norman Fryer in the November '97 issue of *FORMAT* about the problem with his PLUS D. We would like to give him and other readers some information on how we solved the same problem with the PAL chip.

We could not find a way to buy a new chip, so my friends, all Spectrum users and enthusiastic young fellows, started to study how the PAL chip worked. After a few weeks (we did not have any circuit for the PLUS D) the first model circuit made from some 4 IC-s, diodes and an EPROM replaced the faulty PAL chip. A big problem was to put the whole circuit into the small casing of the PLUS D. After a lot of time a much elegant solution was reached, a GAL chip, (a programmable device similar to a PAL) with exactly the same size and pin numbers was burned, and works as (or better) than the original PAL.

If Mr Fryer or anybody else has no other way to repair their PLUS D, and the problem is the failure of the PAL chip, would like to contact us we may be able to help.

Yours sincerely, István Ördög

Wonderful news István, I'm sure there will be a lot of people who will be very happy to read your letter. For those of you that need it, István's address is: H-1148. Budapest, Vezér út 143, Hungary.

Now, to work out the PAL chip's inner secrets, you obviously had to learn a lot about the PLUS D and work out most of its functions. So the big question on my mind is "can you do an article on the subject?" I'm sure there will be great interest in it if you could. *Ed.*

Dear Editor,

Trawling through some back issues recently I came across a series by Peter Collier called Emulation Exchange. It started in the November '96 issue but seemed to die out after only a few episodes.

Are there any plans to resurrect this excellent series, either in *FORMAT* of *FORMAT PC*? Now that more people are using emulators I think it would be a good idea.

Yours sincerely, Charles Gardener.

Indeed Charles, it was a good series, but as with several other things we have done it was a little ahead of its time. Fewer people had access to PCs back then, and it is of course on the PC that most of the emulators run (but not all).

We have lost contact with Peter so there is no hope of restarting the series with him, but if anyone else would like to start a regular column on emulators then I would love to see it appear. The only question would be - which magazine. *Ed.*

Dear Editor,

I just received the January issue of *FORMAT* from Brussels, Belgium (?) via airmail. Isn't that too late for a January issue?

Yours sincerely, Jacob Minidor.

Ah! My secret is out, illicit weekends in Brussels just to post off copies of *FORMAT*.

OK. Truth is, nice as Brussels can be, my wife would not let me sneak off to Belgium for a weekend, and Jenny certainly wouldn't let me go during the week (slave driver....). Anyway, since the end of last year we have taken most of our overseas post away from Royal Mail International because of the number of

items they kept losing. We now use an international mailing company called Deltec. In some cases they actually deliver the mail direct, in others they post the mail either from within the destination country or from another chosen country where they have contracts with the local postal service. The hope is that: a) we will stop having issues go missing, and b) issues will get to their destination faster.

Speed of delivery is important as, sadly, at the moment we are way behind schedule with issues. Oh for an extra couple of weeks in this current month...

Still, thanks for the email, it does help us to plot what they are doing with things once they leave our hands. *Ed.*

Letters may be shortened or edited to fit on these pages although we try to edit as little as possible.

This is YOUR letters page so it is up to you to fill it with interesting things. Come on, get writing, any subject even remotely related to computers. Just keep things as short as you can so we can fit in as many as possible each month. Please write clearly or type your letters. Send them to the address on page 3 or email them to us at Formatpub@aol.com.

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MINEFIELD

A step by step guide to writing a C program using SAM C.

Part 4.

By:- John Eyre.

Right, first the standard opening that I have to repeat each month just to keep the editor happy. This series of articles is not intended as a tutorial on the SAM C language or on how to program. Rather, it is a step by step guide to the development of an example game using SAM C. It's written around the standard version of SAM C, not SAM Vision.

Last time (in December's *FORMAT*) we looked at the setting up many of the functions that are used by the game, in particular the cursor function which forms an important part of playing the game. I hope you all managed to compile the program without errors.

This month we get even closer to our finished game.

Stage 4 Game functions

We will need another change to main(), it should be modified to:

```
main ()
{
    char key;

    initialise ();
    do
    {
        setup ();
        while (!finished)
            play_game ();
        key= getch ();
    }
    while (key != 'q' && key != 'Q')
};
```

Notice that there are now two loops, A *do while* and a *while* loop. The *do*

while allows more than one game to be played hence setup is now inside the loop. The *while* loop continuously calls play_game() as long as the variable finished has a value of zero.

```
void play_game ()
{
    char key;
    int num, chkd;

    key= getch ();

    // pass address of num and chkd
    // to status not their values
    status (xx, yy, &num, &chkd);

    if (key== 'q' || key== 'Q')
    // exit game if Q pressed
        exit (0);
    if (key== 'm' || key== 'M')
    {
        if (!chkd && mines<total)
        // if not marked and
        {
            // mines left
            chkd=2;
            // set chkd to 2
            ++ mines;
            // increment mine count
        }
        else
        {
            // remove marker for mine
            if (chkd== 2)
            // reset chkd to 0
            {
                chkd=0;
                -- mines;
            }
            // decrement mine count
        }
        prn_mines_left ();
    }
    // update display of number of mines left
}
```

```

    if (key== ' ' && !chkd)
// if SPACE pressed and location
{
// not already cleared.
    chkd=1;
// indicate now cleared.
    if (num != 15)
// if not a mine
    {
        num=calc_num ();
// get number of surrounding min
//
        ++ cleared;
// increment count of locations
cleared
    }
}

// check to see if all locations
cleared and mines marked

    if (cleared== rows*cols-total
&& total== mines)
        finished=1;
    map [yy][xx]=num+chkd*16;
// update value for current loca
tion
    move_cursor (key);
    prn_cursor (xx, yy, 0);
// print updated cursor info
}

```

I have included lots of comments above so I won't write a long description of this function. It does more or less what was described in pseudocode earlier, though not necessarily in the same order.

I want to concentrate on the line:-
 status (xx, yy, &num, &chkd);

The & in front of the variable name means that the address at which the variable is stored in memory and not its value is passed to the status function. Say the value of the variable num has been stored at address 40000. If we look at address 40000 and find the value 15 then num is 15 and &num is 40000.

If status() knows the address of a variable it can read it and it can change the stored value. As the addresses of two variables are passed to status(), it can

change the values of both variables so overcoming the problem of only being able to return a single result. The address is a pointer to the value of the variable.

```

int calc_num ()
// counts mines in locations sur
rounding the cursor position
// checks cursor position too bu
t it can't be a mine.
{
    int i, j, x, y, num;
    num=0;
// reset count to zero
    for (i=0;i<3;i++)
// for 3 rows
        for (j=0;j<3;j++)
// for 3 columns
        {
            y=yy-1+i;
// step co-ords through the 9 lo
cations
            x=xx-1+j;
// with cursor position at the c
entre.
// check location is not off the
edge of the minefield.
            if (y>= 0 && y<rows && x>=
0 && x<cols)
                if ((map [y][x] & 16)== 1
5)
// if mine
                    num+= 1;
// add 1 to counter
        }
    return (num);
// return number of mines found
}

```

Note the variable num used here is not the same as num used elsewhere. It is exclusive to calc_num(), it is created when the function is called and lost when the function is exited.

```

void status (int x, int y, int *
ptr_num, int *ptr_chkd)

```

```

{
    int cell_value;
    cell_value=map[y][x];
    *ptr_num=cell_value & 16;
// put result of calculation
// at address of num.
    *ptr_chkd=cell_value/16;
// put result of calculation
// at address of chkd.
}

```

Remember that the addresses of num and chkd were passed to status using status (xx, yy, &num, &chkd);. In the parameter list of the function definition the use of a pointer is indicated by the * in front of the variable. Note that the type is for the value stored at the address pointed to and not the address itself. In fact *ptr_num can be considered as meaning the value stored at the address pointed to by ptr_num.

Looking at both the calling function play_game() and the called function status(), if the value of the variable num has been stored at address 40000 and we look at address 40000 and find the value 15 then:-

```

num is 15      &num is 40000
*ptr_num is 15  ptr_num is 40000

```

This has been a very brief introduction to the use of pointers. Although the concept is fairly straightforward using pointers can be very involved and I'm afraid its back to the Reference book if you want more information.

We almost have a working game now. Remember to write the prototype declarations for the three new functions.

```

void play_game ();
int calc_number ();
void status (int x, int y, int *n, int *c);

```

Before we finish there are a couple of existing functions that need to be

modified.

Locate the function definition for move_cursor() and remove the last statement i.e. prn_cursor (xx, yy, 0); as this is now replaced by the same statement in play_game().

Locate the function definition for prn_cursor() and replace the first statement num=chkd=0; with status (xx, yy, &num, &chkd);. The status() function will work with prn_cursor() in exactly the same way it does with play_game(), except it will be the addresses of the variables local to prn_cursor() that will be passed.

When the text is saved, the code compiled and the program run the game can be played although the way the game ends is rather poor.

Next time we will add some code to finish the game off a little better.

SPECIAL OFFER

If you do not already own a copy of SAM C from Fred Publishing then you have probably skipped over this series of articles. Well if you have skipped them before, now is the time to stop.

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